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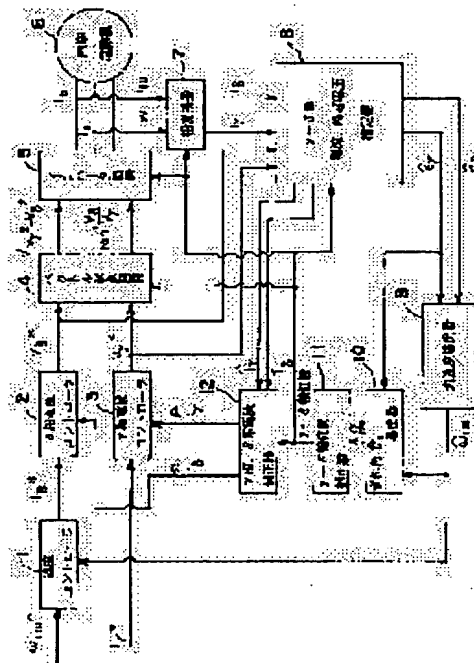
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(54) METHOD FOR PRESUMING SPEED OF PERMANENT MAGNET SYNCHRONOUS MOTOR, METHOD FOR PRESUMING SLIP ANGLE OF ITS ROTOR AND METHOD FOR CORRECTING ROTOR POSITION

(57)Abstract:

PROBLEM TO BE SOLVED: To precisely presume an induced voltage occurring on the γ - δ axis of a permanent magnetic synchronous motor.SOLUTION: A γ axis current $i_\gamma(k)$ and a δ axis current $i_\delta(k)$ are calculated by detecting a stator current for two phases fed to a synchronous motor at the time of $k \cdot TS$ (where $k=0,1,\dots$, TS is a sampling time). and by converting it into a γ - δ coordinate system set up on a rotor. In a state presuming device 8, a corrected amounts are the difference between these currents and a γ axis current $i_{\gamma\text{est}}(k)$ and a δ axis current $i_{\delta\text{est}}(k)$ presumed previously, voltage command value $V_{\gamma^*}(k)$ and $V_{\delta^*}(k)$ converted into the γ - δ coordinate system are used as inputs, and induced voltages $\epsilon_{\gamma}(k)$ of the γ axis and $\epsilon_{\delta}(k)$ of the δ axis generated every time the rotor rotates are used as the disturbance against a current response while the rotor is not in motion. Then, currents $i_{\gamma\text{est}}(k+1)$, $i_{\delta\text{est}}(k+1)$ and induced voltages $\epsilon_{\gamma\text{est}}(k+1)$ and $\epsilon_{\delta\text{est}}(k+1)$ are presumed in the γ - δ coordinate system at the time of $(k+1) \cdot TS$ second.

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